the flow of the gases in the lower part of the setting by the use of an open checker.

By this artificial means it is possible to pass the greatest portion of the hot gases near the bottom of the setting and in this manner the temperatures t_{max} and W may be very nearly equalized. Therefore, in the portion *C* of the tunnel chamber the checkerwork of the ware set to burn should be *set close at the top and open at the bottom.*

The portion *A* of the tunnel chamber will be considered next. This portion is filled with hot ware cooling, and through it is passed the current of cold air to be heated. This air is a cold and heavy fluid which will flow in the lower portion of the setting without any tendency to rise. The only way in which this stream of air can be forced to flow in the upper portion of the tunnel chamber is to increase the resistance to its flow by the checker work built in setting the ware in the tunnel, which for this purpose should be *set close at the bottom and open at the top,* where less resistance is required. Upon comparing the conditions required in section *A* with those required in section *C* of the tunnel chamber, it will be noted that they are diametrically opposed to each other.

It is true that the contraction of the brick or lime, in burning, favors the correct method of operation in these

sections. Since, in the section of the tunnel chamber *A*, an open space will be formed below the roof of the tunnel, due to the skrinkage of the charge, this open space will be quite large in those kilns used in burning lime. But in general, the operation of ring tunnel kilns presents a complicated problem, to which there are two possible compromise solutions:

1. One solution secures an even heating of the crude material, but the incoming air is poorly preheated and the cooling ware is subjected to a sharp drop in temperature which is very liable to result in cracked and spawled ware;
2. The other solution secures a uniform preheat of the incoming air and results in the gradual cooling of the burned ware, but at the same time results in a non-uniform heating of the unburned ware.

The first of these methods of operation is the one ordinarily employed. For example, at the Wachter works at Borovitch, a kiln of this type is used for burning firebrick. The lower part of the tunnel is charged with lumps of fire clay whose quality will not